

What is claimed:

1. A method of preventing, reducing, or inhibiting invasiveness and metastasis of tumor cells in a subject comprising administering to the subject a therapeutically effective amount of the B-subunit of Shiga toxin.
5
2. The method of claim 1, wherein the tumor cells are colon tumor cells.
3. The method of claim 1, wherein the tumor cells are derived from a tissue selected from the group consisting of: colon, lung, brain, skin, ovary, pancreas, liver, stomach, bladder, bone, testicle, uterus, adipose tissue, throat, kidney, tongue, pituitary gland, thyroid, lymphoid tissue, eye, and cervix.
10
4. The method of any one of claims 1-3, wherein the B-subunit of Shiga toxin is Stx1B.
15
5. The method of any one of claims 1-3, wherein the B-subunit of Shiga toxin is Stx2B.
6. The method of any one of claims 1-5, wherein the therapeutically effective amount of the B-subunit of shiga toxin is administered prior to the onset of metastasis by the tumor cells.
20
7. The method of any one of claims 1-5, wherein the therapeutically effective amount of the B-subunit of shiga toxin is administered subsequent to the onset of metastasis by the tumor cells.
25
8. The method of any one of claims 1-7, further comprising administering to the subject a therapeutically effective amount of radiation.
30
9. The method of any one of claims 1-8, further comprising administering to the subject a therapeutically effective amount of at least one chemotherapeutic agent.
10. The method of any one of claims 1-9, wherein the tumor cells produce Gb₃.

11. The method of any one of claims 1-10, wherein the subject is a human.

12. The method of any one of claims 1-11, wherein the B subunit of Shiga toxin is
5 conjugated to a therapeutic moiety.

13. A method of identifying a compound capable of preventing, reducing, or
inhibiting tumor cell invasiveness and metastasis comprising:

- 10 a) contacting a cell that produces Gb₃ with a test compound; and
 b) measuring Gb₃ production or activity by the cell,

wherein a compound which reduces or inhibits Gb₃ production by the tumor cells is
identified as a compound capable of preventing, reducing, or inhibiting tumor cell metastasis.

14. The method of claim 13, wherein measuring Gb₃ production comprises
15 measuring the level Gb₃ Synthetase mRNA.

16. The method of claim 14, wherein the Gb₃ Synthetase mRNA level is measured
using a method selected from the group consisting of: Northern blotting, RNase protection,
primer extension, and RT-PCR.

20 17. The method of claim 13, wherein measuring Gb₃ expression comprises
measuring the level Gb₃ lipid.

25 18. The method of claim 16, wherein the Gb₃ lipid level is measured using a
method selected from the group consisting of: chromatography, ELISA, RIA, FACS, and
immunocytochemistry.